The Y2K Problem

And What We're Doing About It

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What's the fuss all about? 20 years ago, computer programmers would set up years with the last two digits only instead of all four digits to save storage space on computers. The first two digits were assumed to be "19." The programmers didn't worry about what would happen in the year 2000 because they didn't think the programs would still be around by then.

Well, year 2000 is almost here, and when the user inputs "00" for "2000," the program may think it means "1900." One result of this will be that calculations using dates will be inaccurate which could cause some major problems. For instance, a retiree may not get his check because the computer would calculate his age incorrectly. For example, say he was born in 1935. In 2000, the computer would subtract 35 from 00 and calculate his age as -35, instead of subtracting 1935 from 2000 and getting 65!

A serious threat. The Y2K computer problem presents a real threat to all of our computers and information systems, and it isn't just confined to disruption of our mission and administrative activities. The health and safety of our employees as well as the public could also be at risk because of the possible malfunction of devices that depend on embedded computer microchips (EMC). Identifying and correcting Y2K computer problems is one of the government's top priorities as it is one of the most serious operational and administrative problems we've ever faced; one with a potentially disastrous outcome should we fail to respond correctly.

The Y2K date problem is not restricted to any one functional area: it includes business functions such as financial management, personnel management, contract management, health and safety, and many others. Of equal concern is the prospect of major portions of our infrastructure malfunctioning or failing to work at all, such as dams, elevators, and aircraft.

President Clinton said in his executive order on the Y2K conversion, "Unless appropriate action is taken, this flaw, known as the "Y2K problem," can cause systems that support those functions to compute erroneously or simply not run. Minimizing the Y2K problem will require a major technological and managerial effort, and it is critical that the United States Government do its part in addressing this challenge."

What's the MP Region doing about it? Our goal is to have all systems, hardware, and embedded chip technologies Y2K compliant not later than March 1, 1999. This will be accomplished through the replacement or modification of existing systems and technology-dependent equipment. And this will not be inexpensive. We estimate that the cost Government-wide of achieving our goal will approach $12 million, not including embedded chip technology.

In April 1997, we took an inventory of all the hardware, commercial off-the-shelf software (COTS), and locally-developed applications. Then representatives from each of the Regions got together and developed a Y2K plan. The first part of the plan is a list of programs that are not Y2K compliant and a timeline with milestones for fixing each program. The second part involves COTS which are being monitored to see if the vendor will offer a patch or upgrade for Y2K compliance. In some cases, the software may have to be replaced with other brands. The third part of the plan involves hardware, including PCs, communications equipment, UNIX / LAN / WEB servers, and specialized equipment (dam controllers, measuring devices, flow meters, etc.). These will have to be replaced if they cannot be made Y2K compliant; however, PCs connected to the LAN may be OK because they get their date/time from the server.
The programs developed by the MP Region are being made Y2K compliant. This effort will be

completed by March 1, 1999, except for the Central Valley Automated Control System (CVACS) which, being very large and complex, will be completed later in 1999. CVACS replaces two older systems which provide remote and local plant control for the generators, gates, outlet valves, and auxiliary equipment of the Central Valley Project (CVP) powerplants, dams, and temperature control devices. It also maintains a database of information on the dams, reservoirs, and their operation.

Other concerns and efforts. Also of concern are data exchanges with other agencies. The MP Region has automated data exchanges with the State of California's Department of Water Resources, Western Area Power Administration, and the California Data Exchange Center, and with other agencies indirectly. We also depend on data from the National Weather Service, the U.S. Geological Survey, and Pacific Gas and Electric to make operational decisions for the CVP. These data "links" have been identified and agencies have been contacted to begin Y2K analysis, coordination, and repairs where necessary.

Another effort being undertaken is the inventory and certification of equipment that function with EMC technology. Because these microchips are "embedded," there was a problem of such devices possibly being overlooked. EMC technology is utilized to control, monitor, or assist in the operation of equipment, machinery, or systems. Currently the MP Region is inventorying all such devices and requesting Y2K certification from the manufacturers. Contingency plans are also being submitted for all equipment or systems that have been identified as mission critical. Inventory and certification were to be completed by the end of September 1998. Y2K compliance for all equipment identified will be done by March 1999. Non-compliant equipment will be repaired, retrofitted, or replaced by that date.

For more information on how the Region is handling the Y2K problem, contact Donald Sparks, Regional Y2K Coordinator, or Frank Cabading, Regional EMC Coordinator. Or take a look at these websites:

BOR: http://www.usbr.gov/y2k/

DOI: http://www.doi.gov/oirm/y2k/y2kpage1.html.

Or the MPNET: http://intra.mp.usbr.gov/mp3000/mp3100/docs/YK2.html